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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Georg Mies

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EXAMINER

COHEN, AMY R

ART UNIT

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Please find below and/or attached an Office communication concerning this application or proceeding.

31

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,212	<b>Applicant(s)</b> MIES, GEORG	
	<b>Examiner</b> Amy R. Cohen	<b>Art Unit</b> 2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-20 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/16/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 4 is objected to because of the following informalities:

Claim 4, line 4, "the one-dimensional line grating" lacks antecedent basis in the claims.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Braasch et al. (U. S. Patent No. 6,351,313).

Braasch et al. teaches a device (Fig. 2) for detecting a spatial position of a probe element in a multi-coordinate measuring apparatus, comprising: a reference system comprised of at least one first (2) and one second (1) standard that are associated with coordinate axes of the measuring apparatus, the first standard (2) being a planar standard having a main surface carrying a line grating array (3a,b) which includes at least one two-dimensional line grating (Col 3, lines 36-57), the second standard (1) being an elongate standard noncontacting and movable in two dimensions relative to the first standard (Col 3, lines 36-57); and a position measuring system (6, 7, 8, and 10, 11, 12) for determining the spatial position in three dimensions of the second standard with respect to the first standard (Col 3, line 36-Col 4, line 14).

Braasch et al. teaches a device (Figs. 6a,b) for detecting a spatial position of a probe element in a multi-coordinate measuring apparatus, comprising: a reference system having at least one first and one second standard that are associated with coordinate axes of the measuring apparatus, the first standard (16) being a planar standard having a main surface carrying a line grating array (15) which includes at least one two-dimensional line grating (Col 5, lines 5-12), and the second standard (18) being an elongate standard non-contacting relative to the first standard, the second standard being movable in two dimensions (Col 5, lines 1-4, 24-52); and a position measuring system (19, 20, 21) for determining the spatial position of the second standard with respect to the first standard, wherein the position measuring system includes three distance sensors arranged in the corners of an imaginary equilateral triangle on the second standard on a side opposite the first standard (Fig. 6b, Col 5, lines 5-52, specifically, lines 8-12).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braasch et al. in view of Kober (German Application No. DE4132942A1).

Braasch et al. discloses the device as described above in paragraph 3.

Braasch et al. does not disclose the device wherein the line grating array of the first standard includes the two-dimensional line grating and a one-dimensional line grating.

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Kober discloses a device wherein the line grating array of the first standard includes the two-dimensional line grating (Fig. 3, TX2 and TY2) and a one-dimensional line grating (Fig. 3, RX2 or RY2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Braasch et al., to include a one-dimensional line grating on the first standard, as taught by Kober, in order to provide a reference marker to calibrate each individual coordinate axis (Kober, Abstract).

6. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Braasch et al. in view of Braman et al. (U. S. Patent No. 4,833,630).

Braasch et al. discloses the device as described above in paragraph 3 and wherein the position measuring system includes an optical reading means for detecting the line grating array of the first standard, the optical reading means being provided on the second standard opposite the main surface of the first standard (Col 1, lines 60-65, Col 3, line 36-Col 4, line 14).

Braasch et al. does not disclose the device wherein the position measuring system includes at least one first reading head and spaced therefrom a second reading head for detecting the line grating array of the first standard, said reading heads being provided on the second standard opposite the main surface of the first standard; wherein either both reading heads of the two reading heads of the first position measuring system are associated with the two-dimensional line-grating of the first standard, or one reading head is associated with the one-dimensional line grating while the other reading head is associated with the two-dimensional line grating of the first standard.

Braman et al. discloses a device wherein the first position measuring system includes at least one first reading head (10) and spaced therefrom a second reading head (20) for detecting the line grating array of the first standard, said reading heads being provided on the second standard opposite the main surface of the first standard (Figs. 1 and 2, Col 5, lines 10-34); wherein either both reading heads of the two reading heads of the first position measuring system are associated with the two-dimensional line grating of the first standard (Figs. 1 and 2, Col 5, lines 10-34), or one reading head is associated with the one-dimensional line grating while the other reading head is associated with the two-dimensional line grating of the first standard.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to specify the optical reading means of Braasch et al. to be a first and second reading head system, as taught by Braman et al., in order to accurately measure the position of the second standard relative to the first standard using two reading heads which are spaced from each other.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Braman et al.

Braman et al. discloses a device (Fig. 1) for direct detection of a spatial position of a probe element (7) in a multi-coordinate measuring apparatus, including a reference system comprised of at least one first (1) and one second standard (3) that are associated with coordinate axes of the measuring apparatus (Figs. 1 and 2), the first standard being a planar standard having a main surface carrying a line grating array which includes at least one two-dimensional line grating (Fig. 1, Col 4, line 62-Col 5, line 9), the second standard being an elongate standard noncontacting relative to the first standard (Figs. 1 and 2, Col 4, lines 51-61), the second standard being movable in two dimensions and preferably disposed at right angles to the main surface (Figs. 1 and 2, Col 4, lines 51-68), and a position measuring system (10, 20) for

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determining the spatial position of the second standard with respect to the first standard (Col 5, lines 10-20).

Braman et al. does not disclose the device wherein the position measuring system includes three distance sensors arranged in the corners of an imaginary equilateral triangle on the second standard on a side opposite the first standard.

Regarding claim 5: Braman et al. discloses a device wherein the position measuring system includes two distance sensors. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide at least three distance sensors arranged in the corners of an imaginary equilateral triangle, since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Braman et al., to include three distance sensors arranged in the corners of an imaginary equilateral triangle in order to provide additional position data points, enhancing the accuracy of the multi-coordinate measuring apparatus.

#### *Allowable Subject Matter*

8. Claims 6-20 are allowed.

#### *Response to Arguments*

9. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

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10. Applicant's arguments filed November 16, 2005 regarding the rejection of claim 5 in view of Braman et al. have been fully considered but they are not persuasive.

Applicant's arguments regarding the rejection of claim 5 in view of Braman et al. are not persuasive since it appears that Applicant is arguing a limitation not present in claim 5. Namely, claim 5 states only, "wherein the position measuring system includes three distance sensors arranged in the corners of an imaginary equilateral triangle." Claim 5 does not state that the spatial position be determined in three dimensions, as claimed in amended claim 1 and as argued in Applicant's arguments regarding claim 5. Therefore, the claim language is interpreted to comprise three distance sensors only. Since Braman et al. includes two distance sensors (the distance sensors measuring the spatial position of the second standard relative to the first standard in the x-y plane), it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Braman et al., to include three distance sensors arranged in the corners of an imaginary equilateral triangle in order to provide additional position data points, enhancing the accuracy of the multi-coordinate measuring apparatus.

### *Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after



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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy R. Cohen whose telephone number is (571) 272-2238. The examiner can normally be reached on 8 am - 5 pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARC  
February 1, 2006



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